Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (currently amended) A method for isolation of biological macromolecules, said method comprising contacting a ~~multi-layer~~ filter with a biological sample comprising said biological macromolecules, wherein said ~~multi-layer~~ filter comprisinges a first filter layer and ~~on top of~~ a second filter layer wherein said first layer and said second layer are in contact with each other such that said first filter layer is contacted with said biological macromolecules before said second filter layer, and wherein said first filter layer has ~~having~~ a pore size smaller than said second filter layer.

2. (original) The method of claim 1, wherein said biological sample is a cellular lysate.

3. (original) The method of claim 2, wherein said cellular lysate is derived from eukaryotic cells.

4. (original) The method of claim 2, wherein said cellular lysate is derived from prokaryotic cells.

5. (original) The method of claim 3, wherein said eukaryotic cells are selected from the group consisting of fungi, fish cells, yeast cells, plant cells and animal cells.

6. (original) The method of claim 1, wherein said biological macromolecules are nucleic acid molecules.

7. (original) The method of claim 1, wherein said biological macromolecules are protein molecules.

8. (original) The method of claim 6, wherein said nucleic acid molecules are RNA molecules.

9. (original) The method of claim 8, wherein said RNA molecules are mRNA molecules.

10. (original) The method of claim 6, wherein said nucleic acid molecules are DNA molecules.

11. (original) The method of claim 10, wherein said DNA molecules are vectors or plasmids.

12.-15. (cancelled)

16. (previously presented) The method of claim 1, wherein said pore size of said second filter layer is about 1 μm to 500 μm.

17. (previously presented) The method of claim 16, wherein said pore size of said second filter layer is about 10 μm to 70 μm.

18. (previously presented) The method of claim 17, wherein said pore size of said second filter layer is about 20 μm.

19.-20. (cancelled)

21. (previously presented) The method of claim 1, wherein said first filter layer comprises pores of sufficient size to retard the flow of cellular debris and particles.

22. (previously presented) The method of claim 21, wherein said pores of said first filter layer are about 0.1 μm to 1.0 μm in diameter.

23. (previously presented) The method of claim 21, wherein said pores of said first filter layer are about 0.2 μm in diameter.

24. (previously presented) The method of claim 1, wherein said second filter layer is comprised of glass fibers, silica, paper, cellulose, nitrocellulose, diatomaceous earth, and acetylated cellulose.

25. (previously presented) The method of claim 1, wherein said first filter layer is comprised of one or more materials selected from the group consisting of hydrophobic polysolfone, hydrophilic polyether sulfone, cellulose, acetylated cellulose, nitrocellulose, polyester, polyolefin, scintered polyethylene, porous ceramics, silica, polypropylene, paper, and polysaccharide.

26. (cancelled)

27. (previously presented) The method of claim 1~~26~~, wherein said first filter layer has an average pore size of about 0.2 μm, and said second filter layer has an average pore size of about 20 μm.

28. (previously presented) The method of claim 1, wherein said first filter layer is provided in a form selected from the group consisting of wafer, cylindrical, rectangular, beads, gels, square, cartridge, swab tip, plug, frit, membrane, sheets or inserts.

29. (currently amended) The method of claim 1, wherein said ~~multi-layer~~ filter is provided in a form that is suitable to be inserted into a tube, microspin tube, microfuge tube, spin cartridge, vial, ampule, bag or suitable to fit multi-well plates typically used in processing of multiple samples, including, 6-well plates, 12-well plates, 24-well plates, 48-well plates, 96-well plates, 384-well plates, and the like, or suitable to fit into other plate sizes such as 35 mm plates, 60 mm plates, 100 mm plates, or 150 mm plates, and the like.

30. (original) The method of claim 1, wherein the flow of the sample is facilitated by centrifugation, gravity, pressure, vacuum, or any combination thereof.

31. (currently amended) A method for isolation of biological macromolecules, said method comprising;

(a) contacting cells or cellular source containing the macromolecules of interest with a composition capable of lysing all or substantially all of said cells to give a lysate; and

(b) contacting the lysate with a ~~multi-layer~~ filter, wherein said filter ~~the apparatus~~ comprises two filter layers, with a first filter layer in contact with ~~on top of~~ a second filter layer such that said first filter layer is contacted with said lysate before said second filter layer, and wherein said first filter layer has ~~having~~ a pore size smaller than said second filter layer; and

(c) promoting the flow through the ~~multi-layer~~ filter.

32.-54. (cancelled)

55. (currently amended) A method ~~process~~ for isolating biological macromolecules comprising, separating a lysed natural source in a sample by filtration, wherein said sample is passed through a ~~multi-layer~~ filter comprising a first filter layer and ~~on top of~~ a second filter layer wherein said first layer and said second layer are in contact with each other such that said first filter layer is contacted with said biological

macromolecules before said second filter layer, and wherein said first filter layer has ~~having~~ a pore size smaller than said second filter layer.

56. (currently amended) The method ~~process~~ according to claim 55, wherein the flow through the ~~multi-layer~~ filter is promoted by applying positive or negative pressure, or by gravity, or by gravity increased by centrifugation, or by a combination thereof.

57. (currently amended) The method ~~process~~ according to claim 55, wherein said biological macromolecule is a plasmid DNA or genomic DNA having a size of from 1 to 50 kb.

58.-60. (cancelled)

61. (currently amended) The method ~~process~~ according to claim 55, wherein said first filter layer has a pore size of 0.1 to 1.0 μm, and the second filter layer has a pore size of 1 to 500 μm.

62. (currently amended) The method ~~process~~ according to claim 55, wherein said first filter layer comprises one or more materials selected from the group consisting of hydrophobic polysolfone, hydrophilic polyether sulfone, cellulose, acetylated cellulose, nitrocellulose, polyester, polyolefin, scintered polyethylene, porous ceramics, silica, polypropylene, paper, and polysaccharide.

63. (currently amended) The method ~~process~~ according to claim 55, wherein said second filter layer is comprised of glass fibers, silica, paper, cellulose, nitrocellulose, diatomaceous earth, and acetylated cellulose.

64.-65. (cancelled)

66. (previously presented) The method of any of claims 1, 31, or 55, wherein said second filter layer shears genomic DNA.

67. (new) A method for isolating DNA molecules from cell lysates, said method comprising contacting a filter with said lysate, wherein said filter comprises two layers directly contacting one another, and wherein a first filter layer comprises pores of sufficient size to retard the flow of cellular debris and particles and a second filter layer comprises pores of sufficient size to shear DNA molecules.

68. (new) The method of claim 67, wherein said pores of said first filter layer are about 0.1 μm to 1.0 μm in diameter.

69. (new) The method of claim 67, wherein said pores of said second filter layer are about 0.2 μm in diameter.

70. (new) The method of claim 67, wherein said DNA molecules are plasmid DNA or genomic DNA having a size of from 1 to 50 kb.